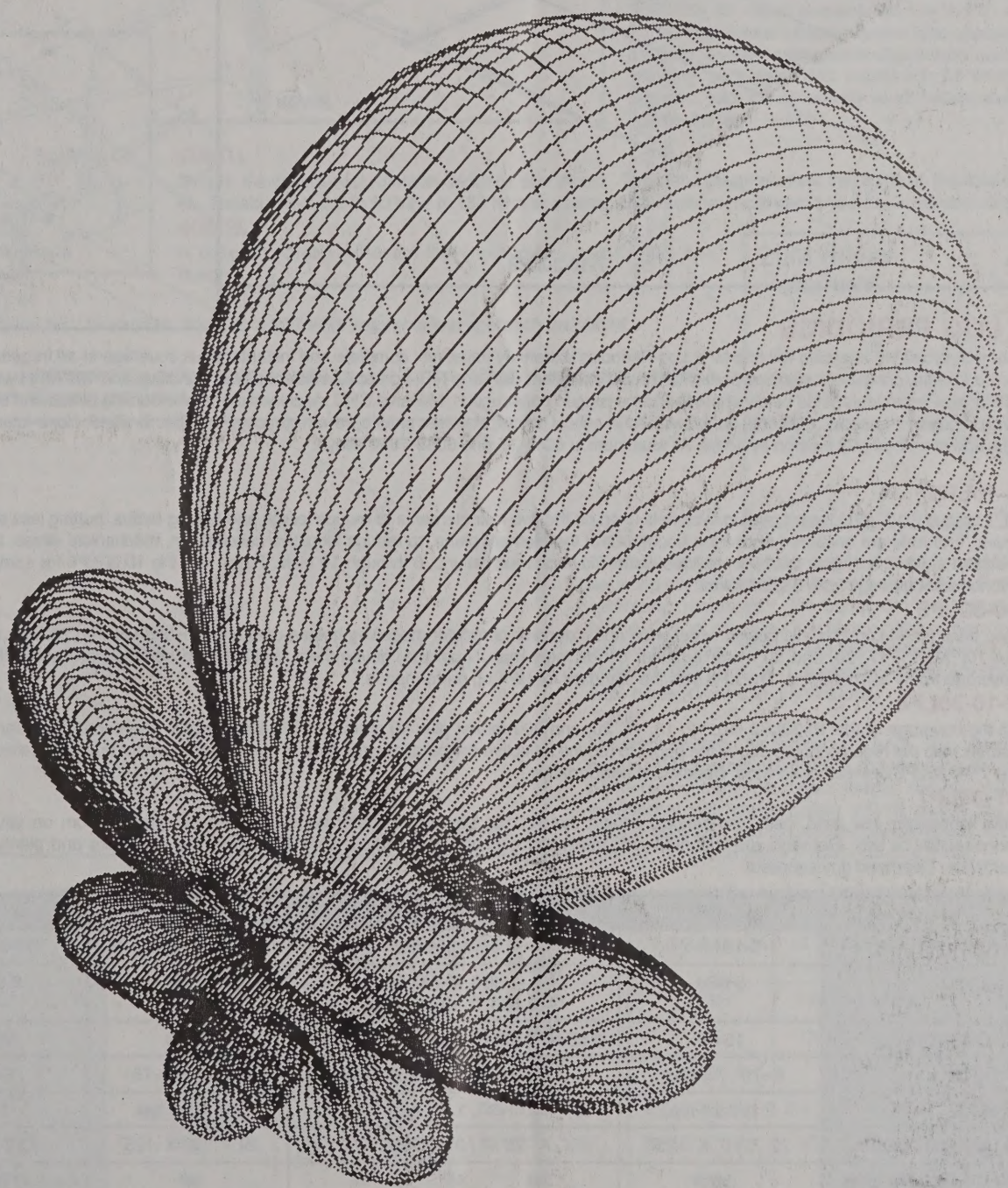
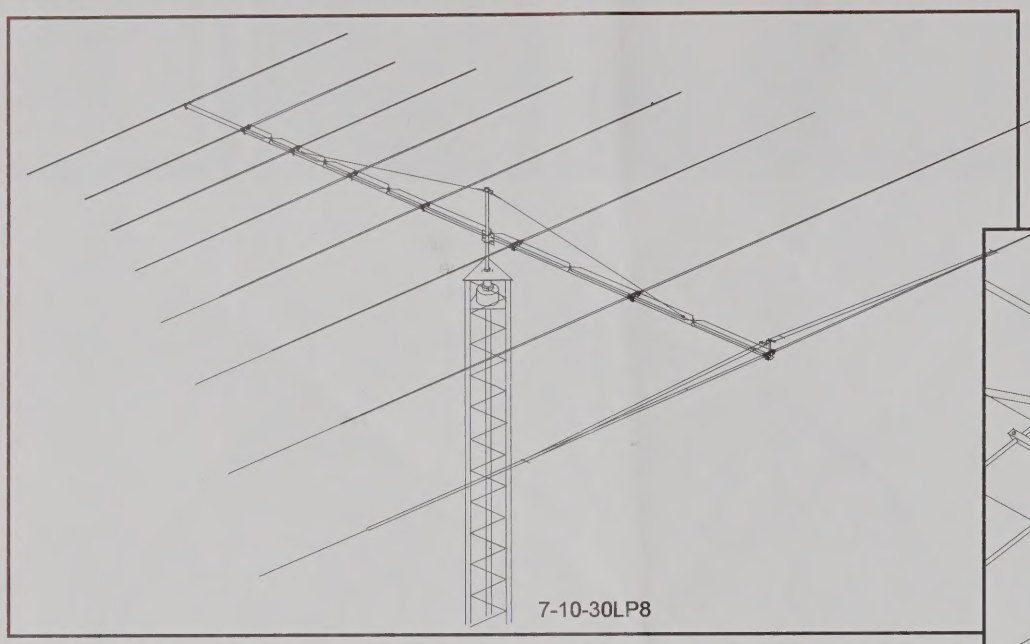
ANTENNAS

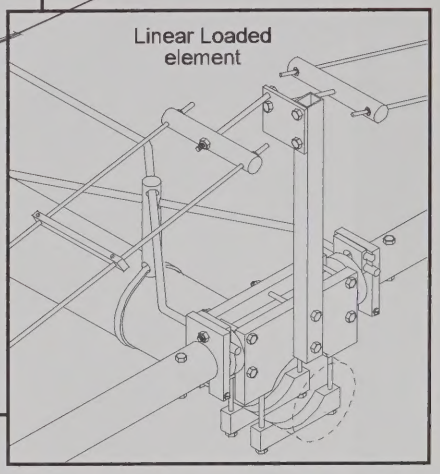
Positioners & Accessories

M²



HF Log Periodics





H. F. LOG PERIODICS

Amateurs with broad HF interests will find M²'s Log-Periodics extremely attractive: complete and instantaneous coverage of ***all*** frequencies within the rated bandwidth, computer optimized performance with excellent gain and F/B, no traps, efficient power handling, and 100 MPH wind survival. The three largest log models listed below share the same rugged construction: Massive CNC machined element mounting plates and clamps, solid fiberglass rod center insulators, elements double-walled at critical points, stainless steel hardware (except U-bolts), bushed, close-tolerance boom couplings, and overhead guy support systems. All aluminum is 6061-T6 and 6063-T832 alloys.

6-10LP5

M²'s unique 3/16" rod Linear Loading system is used on the two rear elements to reduce length and turning radius, putting less strain on rotator and tower. The rods are anchored above the boom, out of the element plane, to reduce inductive cancellation, mechanical stress, and element droop. Installed at 65 ft. or higher the LP5 provides world-wide communications, 6 through 10 MHz. Stack with the 10-30LP8 for complete, efficient, and economical coverage from 6 to 30 MHz!

10-30LP8

Two decades of Log Periodic design experience and extensive computer modelling helped create this hybrid log with 20 MHz of coverage. That's the 10, 12, 15, 17, 20, and 30 meter amateur bands, plus many maritime, government, military, and commercial frequencies. Excellent SWL coverage from1 to 1000 MHz. The LP8 sets the standard for HF Log performance.

7-10-30LP8

All the coverage of the 10-30LP8 (10, 12, 15, 17, 20, and 30 meters) plus 40 meters in 125 KHz tunable segments. The rear element is linear loaded, with the rods anchored above the boom to reduce inductive cancellation, mechanical stress, and element droop. Installed at 65 ft. or higher, the 7-10-30LP8 delivers world-wide, world-class performance.

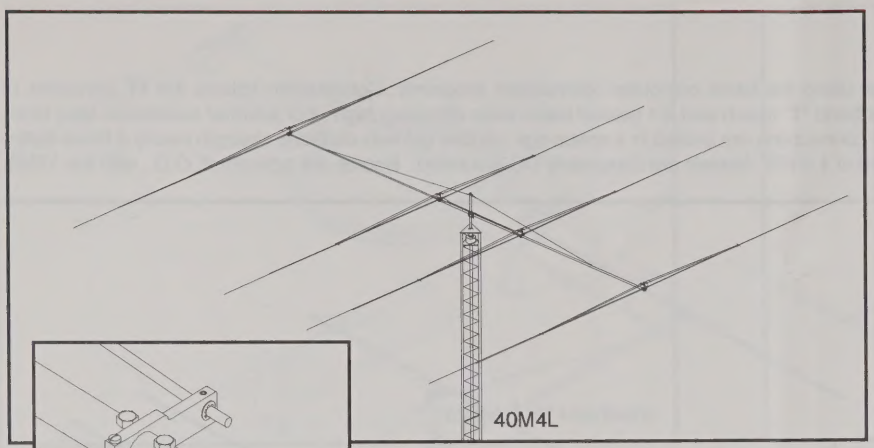
17-30LP7

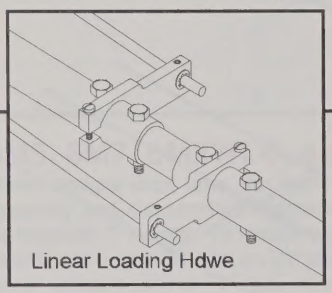
This lightweight, low wind load, log-periodic covers the 17, 15, 12 and 10 meter bands and leaves enough room on your tower for an HF monobander or two! Elements are mounted with machined element ring clamps, solid fiber-glass rod insulators and plenty of stainless steel hardware. Overhead guy supplied.

MODEL	6-10LP5	7-10-30LP8	10-30LP8	17-30LP7
FREQUENCY RANGE	6-10 MHz	7 & 10-30 MHz	10-30 MHz	17-30 MHz
GAIN, typ.	5 dBd	1 dBd @ 7 MHz 6 dBd @ 10-30 MHz	6 dBd	6.5 dBd
FRONT TO BACK, typ.	15 dB	3 dB @ 7 MHz, 15 dB @ 10-30 MHz	15 dB	20 dB
BEAMWIDTH	E=70° / H=85°	E=65° / H=75°	E=65° / H=75°	E=65°
VSWR, MAX.	2:1, 1.5:1 typ.	1.8:1, 1.5:1 typ.	2:1, 1.5:1 typ.	1.5:1
BOOM LENGTH / DIA.	29' 7" / 3" X .125"	29' 7" / 3" X .125"	29' 7" / 3" X .125"	23'8" / 2"
ELEMENT LENGTH, MAX	58'	46'	46'	28'8"
TURN RADIUS	33'	28'	28'	19'
WIND AREA	13 SQ FT	13 SQ FT	12.5 SQ FT	6.5 SQ FT
WIND SURVIVAL	*100 MPH	*100 MPH	*100 MPH	100 MPH
WEIGHT, LBS	97 LBS	86 LBS	83 LBS	29 LBS

*125 MPH versions available

40 & 20 Meter Monobanders





40 and 20 Meter Monobanders

Uncompromising computer optimized performance and construction are the benchmarks for M²'s 40 and 20 meter monobanders. Mechanically, these antennas share a common heritage with M²'s HF Log Periodics: massive, 1/2" thick, CNC machined element clamps, solid fiberglass rod insulators or sleeved element centers, all stainless steel hardware except U-bolts, .125" wall booms, and 100 MPH wind survival ratings.

The 20 meter series use full sized 6063-T832 aluminum elements, tapering from 1-1/4" to 1/2" at the tips. The 40 meter elements start at 1-1/2" and use M²'s unique Linear Loading system (see opposite page) to keep lengths manageable. Associated clamps and shorting bars are CNC machined. All models are supplied with conservatively rated baluns that easily handle full legal limits.

40M1L

Simply the world's best rotatable, reduced-size dipole. The same driven element that lights up the 40M2L, 3L, and 4L. Tunable from 6.9 to 10 MHz in 150 KHz segments. Stackable for more gain and a lower radiation angle.

40M2L

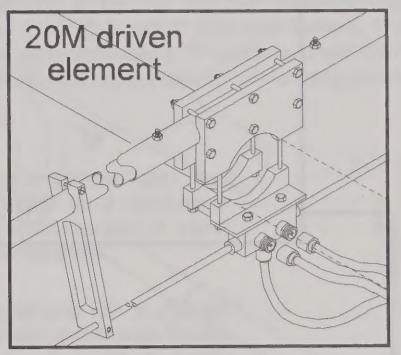
A compact, directional beam that most towers and rotators can handle.

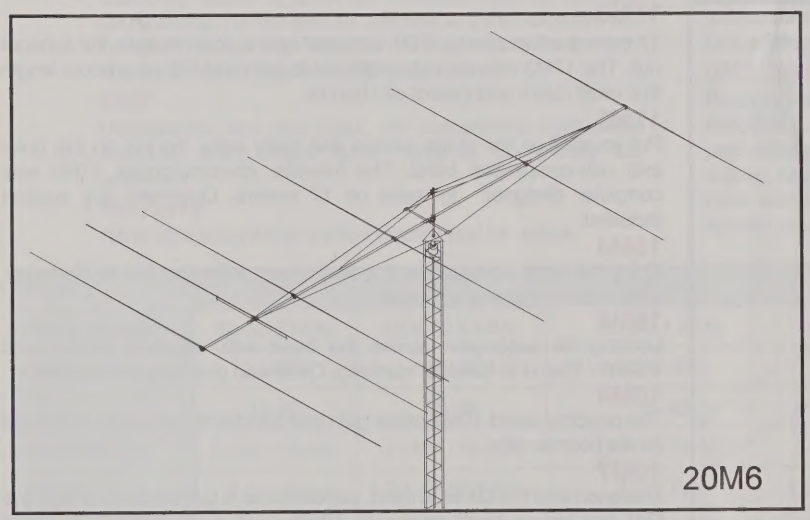
40M3L

Three elements for gain, beamwidth, and F/B in 200 MHz segments that approach the 40M4L.

40M4L

When superior, band dominating performance is called for, call for the 40M4L! Designed by, and built for, the hard core 40 meter enthusiast.





20M4

Match performance to your band preferences and QTH by selecting element spacing / length settings from 5 different optimizing programs: full bandwidth, full phone, low phone, CW, or stacked / low phone options. Narrow band options offer gain, VSWR, and F/B approaching the 20M6. Minimum (full band) and maximum figures are shown in table below. Overhead guy included.

20M6

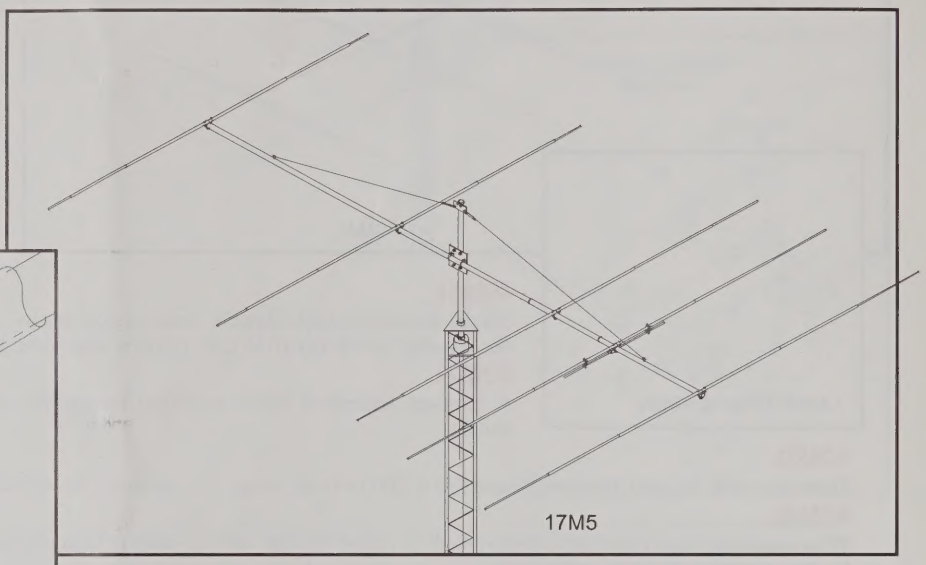
Uncompromising performance and full bandwidth coverage! Computer optimization squeezes the last drop of performance from this boom length: virtually flat gain, exceptional F/B, and excellent VSWR across the band. Double overhead and single side guying ensure long term survival. "T" match with 4:1 balun rated at 3 kW.

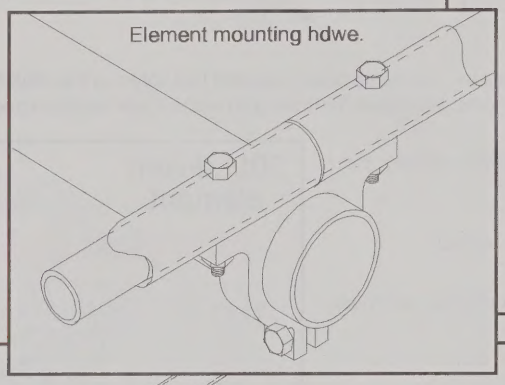
MODEL	40M1L	40M2L	40M3L	40M4L	20M4	20M6
FREQUENCY RANGE	6.9-10 MHz X 150 KHz	7.0-7.3 MHz X 125 KHz	7.0-7.3 MHz X 200 KHz	7.0-7.3 MHz	14.0-14.350 MHz (Full or segments)	14.0-14.350
GAIN	NA	4.2 dBd	5.6 dB	6.2 dBd	7.63 to 8.27 dBd	9.0 dBd
FRONT TO BACK	NA	12 dB	20 dB	22 dB	15.5 to 27.5 dB	25 dB
BEAMWIDTH	NA	E=85°	E=62°	E=60°	E=50°	E=46°
VSWR, MAX	2:1, 1.2:1 typ.	2:1, 1.2:1 typ.	2:1, 1.3:1 typ.	2:1, 1.2:1 typ.	2:1, 1.2:1 @ RES.	1.2:1 typ.
BOOM LENGTH / DIA.	NA	20' / 3" X .125"	30' / 3" X .125"	42' / 3" X .125"	45' / 3" X .125"	60' / 3" X .125"
ELEMENT LENGTH, MAX	46'	46'	46'	46'	37'	37'
TURN RADIUS	23'	25'	28'	31.5'	29.5'	40'
WIND AREA	3 SQ FT	6.5 SQ FT	9.5 SQ FT	13 SQ FT	8.5 SQ FT	14.8 SQ FT
WIND SURVIVAL	100 MPH	100 MPH	100 MPH	100 MPH	100 MPH	100 MPH
WEIGHT, LBS	22 LBS	55 LBS	90 LBS	115 LBS	114 LBS	150 LBS

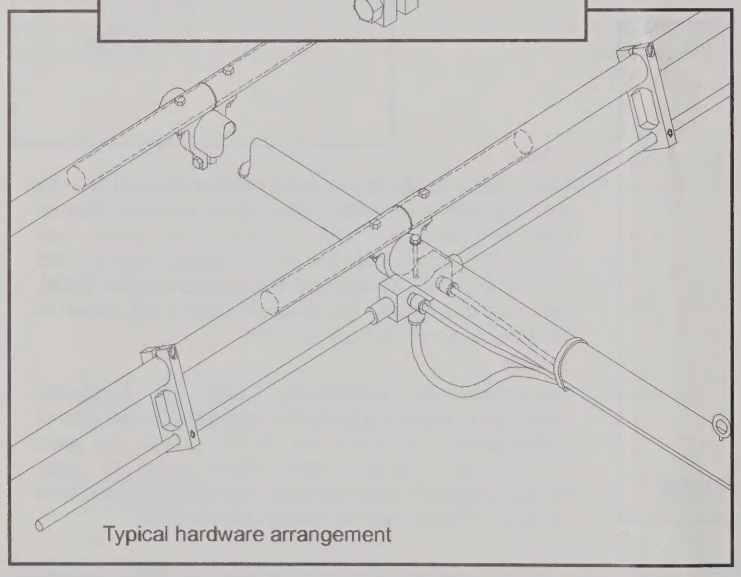
M² 17, 15, 10 Meter Monobanders

17, 15, AND 10 Meter Monobanders

All these models feature fresh-from-the-ground-up designs using the latest computer optimization programs. Construction follows the M² principles of rugged strength and long-term electrical integrity. The broadband "T" match and 4:1 coaxial balun keep efficiency high . For weather resistance, feed block and balun connectors are O-ring sealed. Internal feedblock connections are sealed in a space-age silicone gel with dielectric strength nearly 4 times better than air. The result is compact size and power handling rated at 1.5 KW. Models are completely DC grounded. Booms are typically 2" O.D., with the 17M5, 15M6, and 10M7 having 2-1/2" O.D. center sections. Elements on the 17 and 15 meter models start at 1" with sections tapering to 1/2". The 10 meter models use 3/4" sections with 1/2" tips. Elements are sleeved at the element clamp for extra strength. Booms and elements are 6063-T832 aluminum. Other key components are CNC machined from 6061-T6 alloy. All hardware is stainless steel except U-bolts. Overhead guy systems, when specified, use 3/16" Dacron rope and two turnbuckles.


17M5




Typical hardware arrangement

17M3

17 meters offers plenty of DX potential and is open despite the sunspot null. The 17M3 delivers very respectable gain and F/B on a boom length that most rotors and towers can handle.

17M5

Put yourself on top of the pileups and really enjoy the DX on this quiet and non-competitive band. The full-size, no-compromise 17M5 was computer designed to excel on 17 meters. Overhead guy support included.

15M4

Enjoy full band coverage and a very clean pattern in E and H planes. Outperforms many larger yagis.

15M6

Looking for super-gain across the band with excellent pattern and VSWR? This is it! Ideal for stacking. Overhead guy support included.

10M4

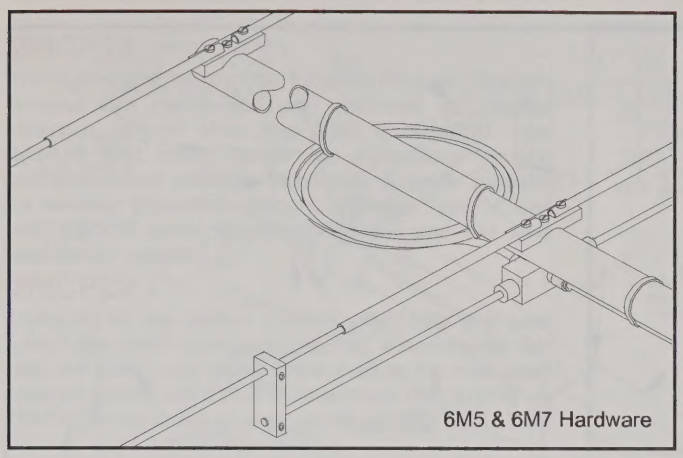
The practical-sized 10M4 offers gain and bandwidth computer optimized for it's boomlength.

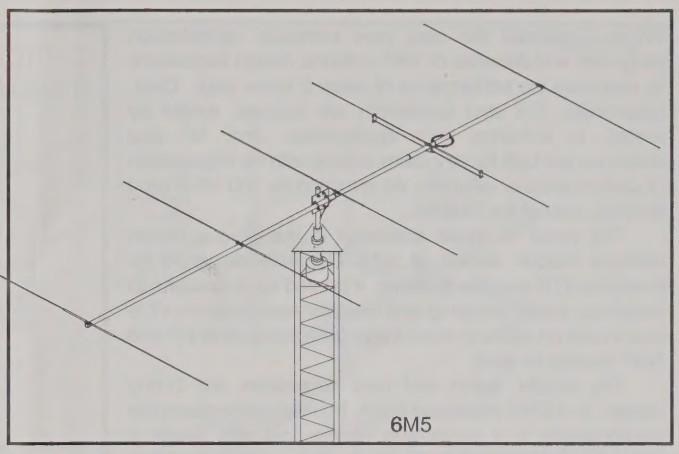
10M7

Designed with the DX'er in mind, performance is outstanding on both the CW and phone band segments. Works well even beyond the rated bandwidth with minimally higher VSWR.

MODEL	17M3	17M5	15M4	15M6	10M4	10M7
FREQUENCY RANGE	18-18.3 MHz	18.05-18.2 MHz	21.0-21.450 MHz	21.0-21.450 MHz	28-29 MHz	28-28.75 MHz
GAIN	6.3dBd	8.6 dBd	8.5 dBd	9.4 dBd	8.7 dBd	10.3 dBd
FRONT TO BACK	25 dB	24 dB	25 dB	25 dB	25 dB	25 dB
BEAMWIDTH	E=60° / H=90°	E=50° / H=60°	E=53° / H=60°	E=48° / H=53°	E=53° / H=60°	E=46°/ H=56°
VSWR	1:1 @ 18.1 MHz	1:1 @ 18.125	1.2:1 Max.	1.4:1 / 1.2:1 Typ.	1.2:1 Max.	1.4:1 Max.
BOOM LENGTH / DIA.	18' / 2"	36' / 2-1/2"& 2"	33'8" / 2" & 2.5"	44'10" / 2" &2.5"	23' / 2"	45' / 2" & 2.5"
ELEMENT LENGTH, MAX	27' 10"	27' 11"	23' 8"	23' 8"	17' 4"	17' 6"
TURN RADIUS	16' 6"	24' 5"	21'	27'	14'	26'
WIND AREA	4 SQ FT	7.25 SQ FT	6.1 SQ FT	8.5 SQ FT	3.7 SQ FT	7.4 SQ FT
WIND SURVIVAL	100 MPH	100 MPH	100 MPH	100 MPH	100 MPH	90 MPH
WEIGHT	30 LBS	55 LBS	32 LBS	50 LBS	23 LBS	49 LBS

6 Meter Antennas


6M5 & 6M7 Hardware


6M5

6M5, 6M7, 6M2WLC, and 6M2.5WLC 6 Meter Monobanders

These designs draw upon the latest computer optimization programs and our best HF and VHF hardware. The 6M5 and 6M7 are designed for easy assembly and disassembly: elements are supplied in halves and mount to machined aluminum element blocks. The 2" O.D. boom sections are in manageable 7' lengths. To reduce weight and windload, the larger 6M2WLC and 6M2.5WLC use parasitic elements of 1/4" rod with 3/8" central sleeves mounted through the boom on UV stabilized button insulators. For extra strength, the central boom sections are 2-1/2" O.D. with 2" O.D. end sections. The driven element uses an HF style element ring clamp with 3/4" element sections (and a 7/8" reinforcing sleeve). All models use a "T" match feed with CNC machined match-block module and shorting bars, O-ring sealed connectors, silicone gel sealed internal connections, and coaxial balun. For matching, power handling and weather resistance, our driven elements cannot be beat!

6M5

Light, but rugged and optimized for GAIN! Quick and easy assembly makes it great for mountain-topping, grid and DXpeditions. For the serious enthusiast, it's an effective and inexpensive building block for vertical stacks and moon-bounce arrays. Completely DC grounded.

6M7

Manageable and mid-sized, yet outperforms competitive antennas with longer boom lengths. Completely DC grounded.

6M7JHV

NEW light weight high performance. Ideal for arrays.

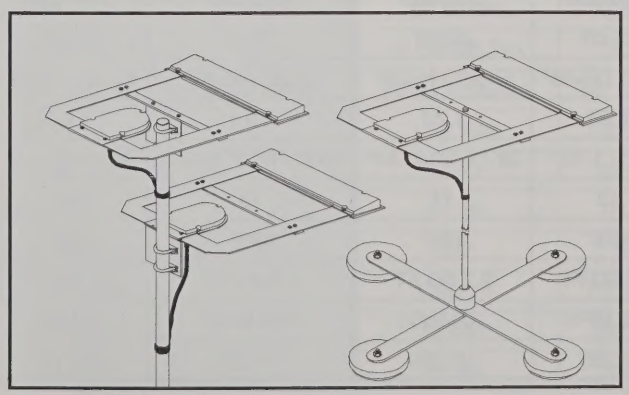
6M2WLC

Computer optimized to produce maximum gain and performance around 50.1 MHz. Perfect as a stand-alone antenna or a building block for a spectacular 6 meter gain-package. Overhead guy system supplied.

6M2.5WLC

Recently tweaked for a bit more gain and F/B. If a single 6M2.5WLC will produce moon echoes at full legal power, just imagine what it can do on long-haul tropo, meteor scatter, or just an ordinary E or F2 opening. Stacked arrays have worked single yagi stations on EME! Overhead guy system supplied.

MODEL	6M5	6M7	6M7JHV	6M2WLC	6M2.5WLC	6MSQLOOP
FREQ RANGE	50-50.5 MHz	49.5-50.5 MHz	50-50.4 MHz	49.7-50.5 MHz	49.6-50.3	50-54 MHz X 100 KHz
GAIN	9.4 dBd	10.5 dBd	10.9 dBd	11.9 dBd	12.6 dBd	4 dBv (see text)
F / B	12 dB	23 dB	25 dB	25 dB	23 dB	NA
BEAMWDTH	E=52° / H=60°	E=42° / H=50°	E=40° / H=42°	E=36° / H=39°	E=33° / H=37°	OMNI / Horiz. Pol.
VSWR	1.2:1 Typ.	1.2:1 @ 50.1 MHz	1.2:1 Typ.	1.2:1 @ 50.12 MHz	1.2:1 Typ.	1.3:1 X 100 KHz
BM LGTH / DIA.	15'10" / 1-1/2"	26'9" / 2"	30' 8" / 1 1/2"	39'6" / 2" & 2 1/2"	50'2" / 2-1/2"to 2"	Size: 17" X 17" X 2"H
WIND AREA	2 SQ FT	3 SQ FT	2.5 SQ FT	5 SQ FT	5.6 SQ FT	.17 SQ FT
WIND SURV	100 MPH	100 MPH	85 MPH	100 MPH	100 MPH	100 MPH
WEIGHT	9 LBS	20 LBS	17 LBS	31 LBS	38 LBS	5 LBS



6MSQLOOP

This compact mobile / base antenna delivers a strong omnidirectional, horizontally polarized signal. Physically, the SQLOOP is a flat, reduced-size Square LOOP, fabricated from 2" wide TIG welded sections. The black ABS weather cover is configured for minimum wind resistance. The heart of this design is a magnetically shielded coupling loop that converts the 2 ohm loop impedance into a 50 ohm unbalanced feed. Horizontal polarity permits the SQLOOP to pick up about 4 dB of ground gain that verticals cannot. Poor or no ground yields less gain but a lower radiation angle.

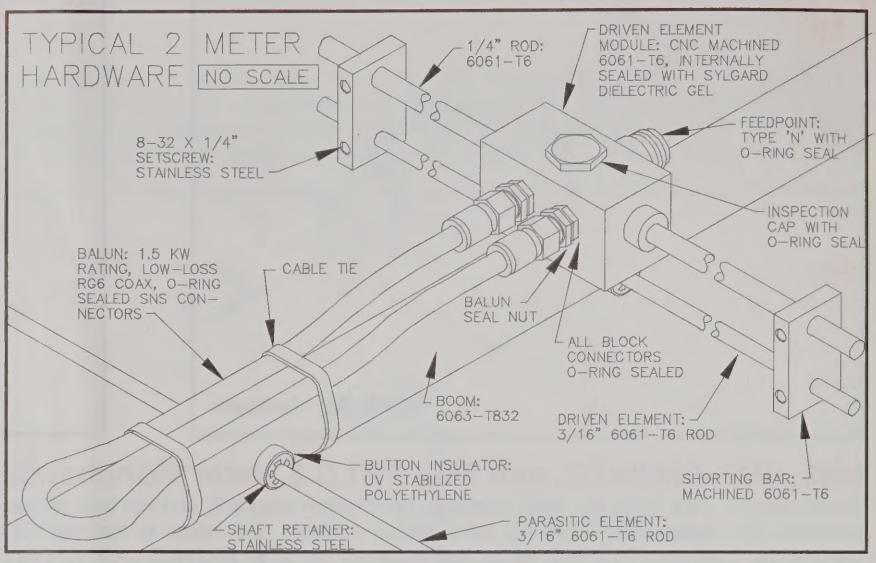
Hardware is supplied for easy mobile or fixed mounting. The fiberglass crossbar has a 3/8" center hole for mobile mounting. Attach the base-mount bracket here for mast-top mounting, or to the leading edge of the SQLOOP for sidewall or mast mounting (see drawing at left). 1-1/2" and 2" U-bolts are supplied. On the right, with single SQLOOP is the optional "BIG FOOT" mobile mag-mount.

2 Meter Yagis

We've combined the best new computer optimization programs and decades of VHF antenna design experience to maximize the performance of every 2 meter yagi. Gain, beamwidth, F/B and bandwidth are tailored, model by model, to enhance your applications. And, M^2 yagi antennas are built for long-term service with no degradation of performance or reliability. All are rated for 100 MPH wind survival, except the 2M8WL .

The heart of these antennas is the unique driven element module shown at right. Originally designed for maritime ATS satellite systems, it proved so successful at matching, power handling and weather resistance that it is now in use on all our 2 meter yagis (and many other HF and UHF models as well).

The details: balun and feed connectors are O-ring sealed to a CNC machined block. Internal connections are encapsulated in a space-age silicone gel with nearly 4 times the dielectric strength of air. The balun connectors are triple sealed on the coax and nut-sealed at the block connectors. The type "N" feed connector features a beryllium copper, gold-plated center pin. Power handling is rated at 1500 watts.


TYPICAL 2 METER HARDWARE
NO SCALE
1/4" ROD: 6061-T6
DRIVEN ELEMENT MODULE: CNC MACHINED 6061-T6, INTERNALLY SEALED WITH SYLGARD DIELECTRIC GEL
FEEDPOINT: TYPE 'N' WITH O-RING SEAL
8-32 X 1/4" SETSCREW: STAINLESS STEEL
INSPECTION CAP WITH O-RING SEAL
BALUN: 1.5 KW RATING, LOW-LOSS RG6 COAX, O-RING SEALED SNS CONNECTORS
CABLE TIE
BALUN SEAL NUT
ALL BLOCK CONNECTORS O-RING SEALED
BOOM: 6063-T832
DRIVEN ELEMENT: 3/16" 6061-T6 ROD
BUTTON INSULATOR: UV STABILIZED POLYETHYLENE
SHORTING BAR: MACHINED 6061-T6
SHAFT RETAINER: STAINLESS STEEL
PARASITIC ELEMENT: 3/16" 6061-T6 ROD

Other components match the driven element for durability. Parasitic elements are 3/16" 6061-T6 rods, mounted through the boom on UV stabilized Polyethylene button insulators and secured with stainless steel shaft retainers. Booms use 6063-T832 alloy aluminum. Except for U-bolts, all hardware is stainless steel. The bottom line: high performance antennas that shrug off the effects of weather and time.

2M4

A clean, compact full-band design ideal for base and portable use with FM, Packet, SSB, point to point and repeater linking. Small enough to rotate in an attic.

2M7

Explore the potential of a high performance directive antenna. A lot of bang for the buck, outperforming many longer competitors. Ideal for those with limited space or budgets. Low sidelobes for stacking. Lightweight for portable hill topping.

2M9FM / 2M9SSB

2 special 9 element models, one optimized for FM (146-148 MHz) and one for SSB (144-146 MHz). Both are lightweight, easy to handle, and deliver the most gain for boom length of ***any*** antenna. Stack a pair for the same big gain (14.8 dBd) as our 33' 2M5WL but with only an 8' turning radius.

2M12

A clean pattern so you hear better, interfere less. Ideal for stacking. Two, side by side, vertically polarized are a dynamite FM DX package - four are perfect for long haul tropo DXing or moonbounce.

2M5WL

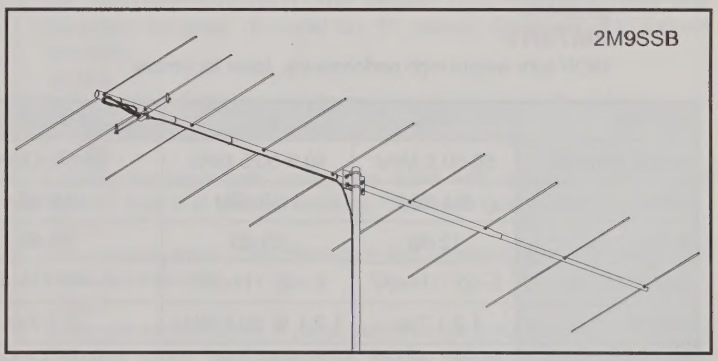
Designed for the serious DXer. Maximum gain for minimum weight and windload. Widely used in EME and Tropo scatter arrays.

2M18XXX

Optimized for a powerful signal on SSB, 144-146 MHz. Better sidelobes and F/B than any other antenna on the market.

2M8WL

Designed specially for EME contact with even small 4 yagi stations. Dynamite on Tropo. Boom tapers from 2" to 3/4". Top and side guyed. Packs in 5' long box for convenient travel.



MODEL	2M4	2M7	2M9	2M12	2M5WL	2M18XXX	2M8WL
FREQUENCY RANGE	144-148 MHz	144-148 MHz	FM or SSB	144-148 MHz	144-148 MHz	144-146 MHz	144-146 MHz
GAIN	7.5 dBd	10.3 dBd	12.0 dBd	12.8 dBd	14.8 dBd	15.3 dBd	16.7 dBd
FRONT TO BACK	20 dB	20 dB	24 dB	25 dB	22 dB	25 dB	23 dB
BEAMWIDTH	E=54° / H=74°	E=46° / H=54°	E=35° / H=40°	E=32° / H=36°	E=26° / H=29°	E=25° / H=29°	E=23° / H=26°
VSWR	1.5:1 Max.	1.3:1 Typ.	1.4:1 Max.	1.2:1	1.2:1	1.2:1	1.2:1
BOOM LENGTH / DIA.	4' / 1"	8'10" / 1"	14'6" / 1"-3/4"	19'6" / 1-1/2"	33' / 1-1/2 to 3/4"	36'3" / 1-1/2" to 3/4"	52'9" / 3" to 2"
ELEMENTS	4	7	9	12	17	18	24
TURN RADIUS	4'	4' 6"	8'	10'6"	18'9"	19'6"	24'2"
WIND AREA	.5 SQ FT	.74 SQ FT	1.2 SQ FT	1.5 SQ FT	2.7 SQ FT	2.9 SQ FT	3.5 SQ FT
WIND SURVIVAL	100 MPH	100 MPH	100 MPH	100 MPH	100 MPH	100 MPH	75 MPH
WEIGHT	3 LBS	4 LBS	6 LBS	8 LBS	12 LBS	14 LBS	23 LBS

2 Meter Specialized

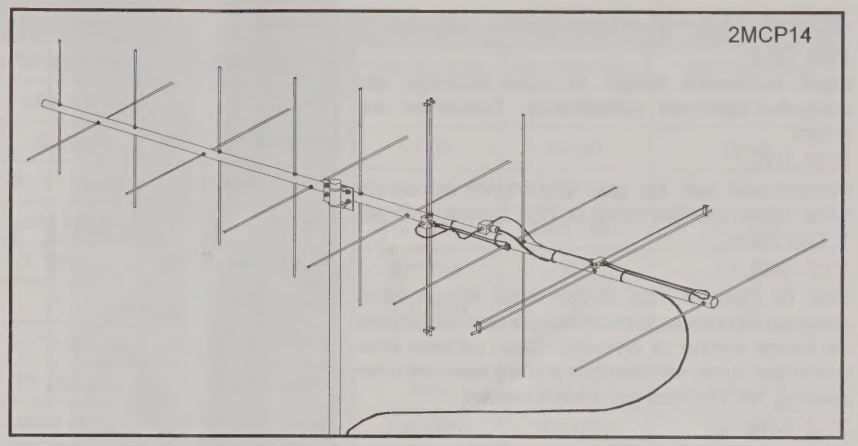
M²

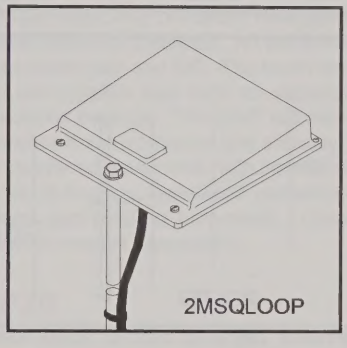
2MCP14

This lightweight, medium performance Circular Polarized antenna has match and gain optimized for satellite reception, 144-147 MHz. Also great for terrestrial use, 143-148 MHz, when terrain and obstructions result in less-than-perfect polarities. Extensively computer modelled for minimum side-lobes, optimum S/N ratios. Type "N" feed with 1.5 KW power handling. 137 MHz and 149 MHz models also available.

2MCP22

Designed for the serious OSCAR user. Side and back lobes have been significantly reduced, enhancing the S/N ratio and putting your power where it will do the most good! Ideal for general use across the band from FM , to SSB , to CW DX. Arrays of two or more can be used for EME. Type "N" feed and 1.5 kW power handling





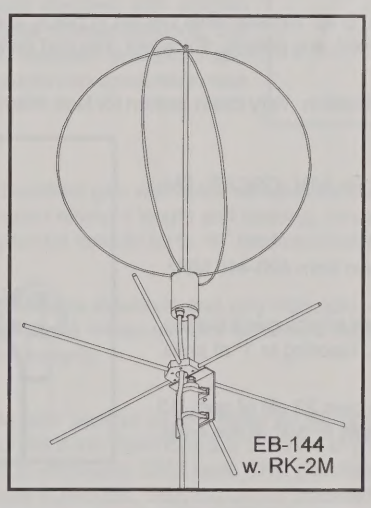
2MSQLOOP

When space, time, budget and the desire for good performance on SSB / CW are all factors, the unique SQLOOP is a proven winner. Get consistent mobile and base communications of 200 miles or more; save wear and tear on your rotator. Surprisingly big signal because the horizontally polarized SQLOOP picks up almost 5 dB of ground gain that verticals can't! Surprisingly small, this low windload, 9" x 9" x 1" package can be discretely mounted with a single 3/8-24 bolt in a variety of base station or mobile locations. No groundplane or radials needed for maximum performance. For mobile use, the SQLOOP COMBO option includes an 18" mast section and single mag-mount.

Get even more gain (6 to 8 dB over average ground) and greater mounting versatility from the SQLOOP-STACK option: two SQLOOPS with mast sections, phasing lines, "T" junction block. Wall / mast mounting plate and U-bolts are supplied for convenient attachment to masts, plumbing vents, eaves, sidewalls, etc. For mobile use, the optional "Triple-Sticker" Mag-mount is recommended.

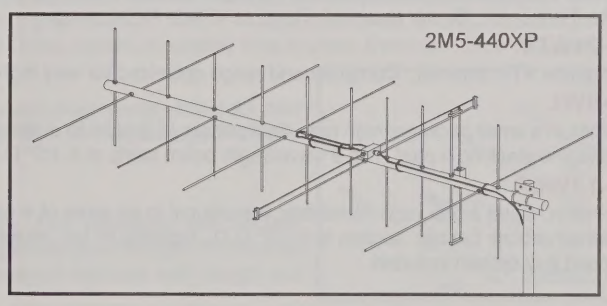
EB-144 "Eggbeater"

Great for mobile, base, net control, contest or field day...and outstanding for accessing the low-pass OSCAR satellites (even the weather-sats @ 137 MHz). No steering or rotation is needed. The distinctive, compact "Eggbeater" offers a whole new performance package for fixed and mobile use: smooth omnidirectional, horizontal polarity at the horizon, Right Hand Circularity overhead. Std 3/8-24 mobile mount. For enhanced satellite operation, the optional RK-2M Radial Reflector Kit increases the overhead circular signal by 6 dB and provides a convenient mounting plate and U-bolts for fixed installations. For a revealing review in print see the 9/93 QST.



2M5-440XP

Compact dual band antenna designed for linking repeaters and remote bases using both 2 meters and 440 MHz. Cross polarized to avoid poor performance common with dual band antennas when both are vertically polarized on the same boom. Useful also for OSCAR, Packet, or wherever 2 band capability and compact size are needed.



MODEL	2M5-440XP	2MCP14	2MCP22	2MSQLOOP	EB-144
FREQUENCY RANGE	2M & 430-450 MHz	143-148 MHz	144-148 MHz	144-144.5 MHz	135-150 MHz
GAIN	9 / 12 dBd	10.3 dBdc	12.5 dBdc	4.86 dBd @ 11°	6 dB, Horiz. or RHC o'head
FRONT TO BACK	12 / 25 dB Typ.	20 dB	25 dB Typ	NA	NA
BEAMWIDTH / PATTERN / POL.	Cross Polarized	52° Circular	40° Circular	OMNI, Horiz. Pol.	OMNI, Horiz. & RHC
VSWR	1.3:1 Max.	1.3:1 Typ.	1.4:1 Max.	1.5:1 Max. x 100 KHz	1.5:1 Max.
BOOM LENGTH / DIA.	5'8" / 1"	10'6" / 1"	18'6" / 1-1/2 to 1"	NA	NA
ELEMENTS	5 / 10	7H / 7V	11H / 11V	1(loop)	2 (loops)
TURN RADIUS / SIZE	5'5"	6'4"	10'	9"SQ X 1"H	34"H X 28"W
WIND AREA	1 SQ FT	1.1 SQ FT	2.5 SQ FT	.05 SQ FT	.07 SQ FT
WIND SURVIVAL	100 MPH	100 MPH	100 MPH	100 MPH	100 MPH
WEIGHT	4 LBS	6 LBS	12 LBS	1 LB	1.4 LBS

M² 220 MHz & UHF Yagis

220 MHz Yagi Antennas

222-7EZ

Clean mechanical design, full band coverage, and computer optimized performance. Center or rear mount.

222-10EZ

Medium size with flat gain and VSWR across the band. Driven element same as 7EZ. Center mounted, 1" O.D. boom.

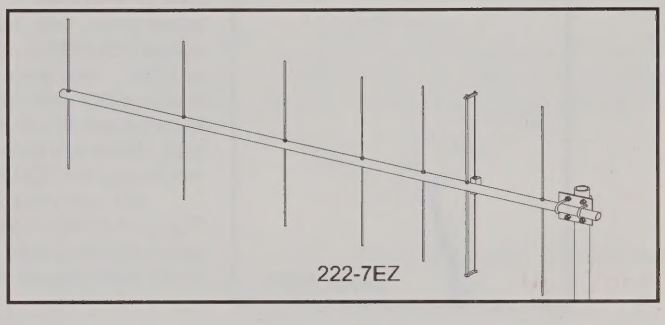
222-5WL

This 15 Element Yagi is our latest design using computer techniques to maximize gain and pattern with the fewest number of elements. Clean patterns allow you to hear more, interfere less and are essential when stacking. No overhead guy system needed.

222-7WL

Seven wavelength performance with flat gain and VSWR. Low windload, 3/32" Dacron overhead guy system included.

MODEL	222-7EZ	222-10EZ	222-5WL	222-7WL
FREQ. RANGE	220-226 MHz	222-226 MHz	222-226 MHz	222-226 MHz
GAIN	9.8 dBd	12 dBd	15.2 dBd	16.4 dBd
FRONT TO BACK	22 dB	23 dB	21 dB	25 dB
BEAMWIDTH	E=46° / H=52°	E=34° / H=39°	E=26° / H=28°	E=24° / H=26°
VSWR	1.5:1 Max.	1.2:1 Max.	1.2:1 Typ.	1.2:1 Max.
BOOM LENGTH	5'8"	9'9"	23' 3"	32'5"
ELEMENTS	7	10	15	23
TURN RADIUS	5' 6"	6' 3"	12' 6"	18' 3"
WIND AREA	.5 SQ FT	.9 SQ FT	1.5 SQ FT	2.7 SQ FT
WIND SURVIVAL	100 MPH	100 MPH	100 MPH	75 MPH
WEIGHT	3 LBS	4 LBS	9 LBS	11 LBS


222-7EZ

UHF Yagi Antennas

Uncompromising, long term performance and electrical integrity are assured with computer optimized designs, CNC machined parts, silicone gel-sealed drive blocks, and O-ring sealed connectors. Most models feature 3/16" 6061-T6 rod elements and UV stabilized button insulators. All hardware is stainless steel except U-bolts. Rugged construction permits a 100 MPH wind survival rating (except 420-450-5HD @ 150 MPH) and all models use low-loss "N" type feed connectors.

420-450-5HD

150 MPH wind survival. Ruggedized components include .125" wall boom, 5/16" rod elements welded in place, and a totally sealed / DC grounded driven element. Perfect for linking and portable use, ATV and Packet. Rear mounted, any polarity. Excellent gain and pattern across the whole 70 cm band.

420-450-11

Full band coverage. Ideal for repeater linking, ATV or any point-to-point application. Very clean pattern for less intermod. Simply outperforms the competition. Stack for narrower beam and greater gain. Rear mounted, any polarity.

440-18

Computer optimized for excellent pattern and gain across the band. Ideal for ATV, OSCAR, FM, long haul tropo, etc. Center mounted. Good candidate for stacking.

440-21ATV

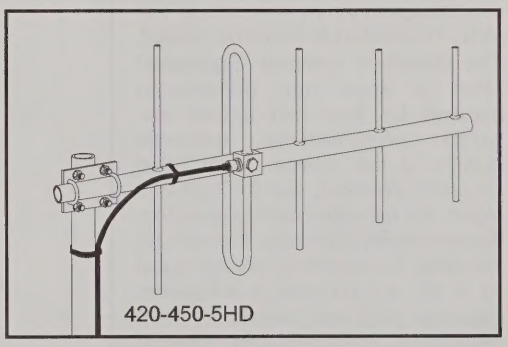
The ultimate ATV antenna. Computer and range optimized for very high gain from 420-440 MHz.

432-9WL

Dynamite in a small package: high gain, tight pattern (E and H) to outperform anything in it's class. Just imagine stacking a pair! The 9 wavelength boom starts at 1-1/2" O.D., tapering to 1" at ends.

432-13WLA

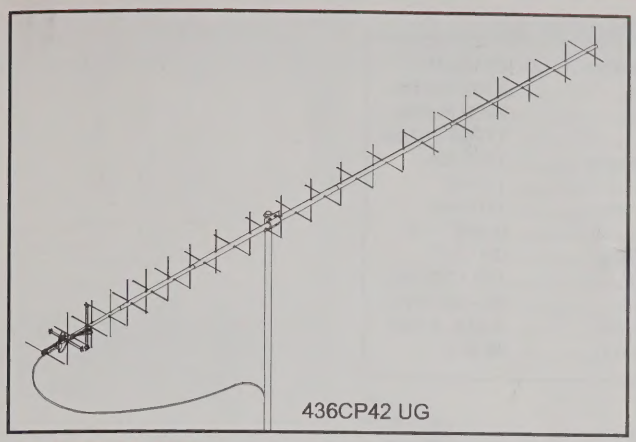
A top-notch, stand alone yagi. Absolutely sensational in an array of 4 with over 23 dB of gain. 13 wavelength boom: central section is 1-1/2" O.D., tapering in 1/4" increments to 3/4" at the ends. Overhead guy system included.


420-450-5HD

MODEL	420-450-5HD	420-450-11	440-18	440-21ATV	432-9WL	432-13WL
FREQUENCY RANGE	420-450 MHz	420-450 MHz	420-453 MHz	420-440 MHz	420-440 MHz	430-434 MHz
GAIN	7.8 dBd	11.3 dBd	14.5 dBd	15.9 dBd	17.3 dBd	18.6 dBd @ 432
FRONT TO BACK	20 dB	20 dB	23 dB	23 dB	24 dB	22 dB
BEAMWIDTH	E=56° / H=72°	E=34° / H=43°	E=27° / H=32°	E=22° / H=24°	E=20° / H=22°	E=16° / H=18°
VSWR	1.2:1 Typ.	1.2:1 Typ.	1.2:1 Typ.	1.2:1 Typ.	1.2:1 @ 425-436 MHz	1.2:1 Max.
BOOM LENGTH.	2'2"	5'	11'4"	14'6"	21' (9 WL)	30'8" (13 WL)
ELEMENTS	5	11	18	21	28	38
MOUNTING	REAR	REAR	CENTER	CENTER	CENTER	CENTER
WIND AREA	.33 SQ FT	.575 SQ FT	.875 SQ FT	1.25 SQ FT	1.6 SQ FT	2.5 SQ FT
WIND SURVIVAL	150 MPH	100 MPH	100MPH	100 MPH	100 MPH	100 MPH
WEIGHT	3 LBS	4 LBS	5 LBS	4.6 LBS	8 LBS	10 LBS

UHF Specialized & Microwave

M²



MODEL	EB-432	436CP30	436CP42 UG
FREQUENCY RANGE	420-450 MHz	430-440 MHz	430-438 MHz
GAIN	4 dBv	14.5 dBdc	16.8 dBdc
F/B or ELLIPTICITY	<1 dB	22 dB	25 dB
BEAMWIDTH / POL.	OMNI, hor/cir	30° Circular	21° Circular
VSWR	1.5:1 Max.	1.4:1 Max.	1.5:1 Max.
BOOM LENGTH / SIZE	9.5" Dia.	9'9"	18' 10"
ELEMENTS	2 (loops)	30	42
TURN RADIUS	NA	5'8"	11' 6"
WIND AREA	MIN	1 SQ FT	2 SQ FT
WIND SURVIVAL	100 MPH	100 MPH	100 MPH
WEIGHT, LBS	2 LBS	5 LBS	7.8 LBS

436CP42 UG

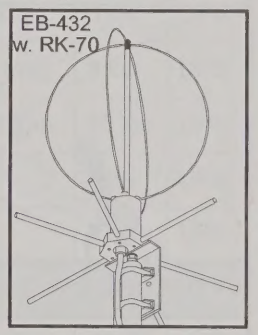
The Ultra/Gain 436CP42 UG sets a new performance standard for UHF circular polarized antennas. An extremely clean pattern helps maximize forward gain and F/B. The boom length is matched to the 2MCP22, and together they form an unbeatably powerful satellite communications package. The 3/16" rod elements are centered in the boom to minimize interaction and ellipticity. Driven elements use our CNC machined drive block, with internal connections sealed in silicone gel, O-ring and nut-sealed connectors, and low-loss RG-6 coax baluns and phasing harnesses. Center mounted, requires nonconductive mast or crossboom.

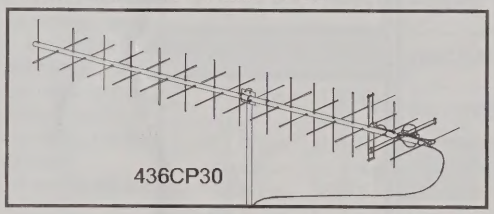
436CP30

High performance circular polarized antenna with a remarkably clean pattern, and noise temperature well matched with modern low-noise preamps. Designed for satellite communications, the CP30 is also a powerful tool for ATV, repeater operation, and long-haul tropo DX. Center mounted, requires non-conductive mast or crossboom.

EB-432 "Eggbeater"

Versatile performer ideal for mobile, base, net control, contest, field day operations and satellite communications. Produces 6 dB of omnidirectional, horizontally polarized gain at the horizon when kept at least 14" above ground or reflective surface. Above the horizon, the pattern becomes Right Hand Circular for accessing OSCAR. The optional RK-70 Reflector Kit (shown below the "eggbeater") directs the gain to the overhead circular-polarized lobe.Mounts to 3/8-24 male thread.





902-10EZ and 902-18EZ

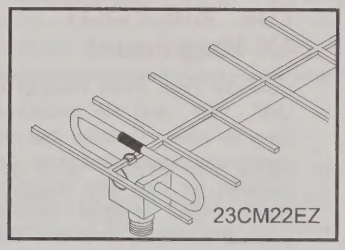
State-of-the-art design and construction. Excellent gain with quick roll off at band edge to prevent receiver overload from hi-power services above 930 MHz. CNC punched element modules ensure exact element length and spacing, consistent performance. The "T" match drive block is CNC machined, silicone gel sealed, and provides a virtually flat match for over 40 MHz. "N" feed connector is O-ring sealed. Assembly time is under 5 minutes. Rear mounted.

902-14WL

An excellent ratio of size to performance, with low sidelobes and very high gain. A quad array yields almost 25 dBd! Ideal for Tropo and EME. Sealed, folded dipole driven element and boom tapered from 1-1/4", through 1" to 3/4" assures mechanical strength and electrical integrity.

23CM22EZ and 23CM35

Driven element is a modified folded dipole with internal balun. Great for hill-topping, ATV, repeaters, and OSCAR. Great for weak signal tropo / EME area of the band. Gain tops any antenna of comparable boom length. 35 Element model features 3/16 rod elements on button insulators. 22EZ uses CNC punched element modules with length and spacing accurate to .003"! Assembles easily in minutes. Both are center mounted.



MODEL	902-10EZ	902-18EZ	902-14WL	23CM22EZ	23CM35
FREQUENCY RANGE	900-928 MHz	900-928 MHz	900-910 MHz	1250-1300 MHz	1250-1300 MHz
GAIN	12.6 dBd	14.8 dBd	19 dBd	16.0 dBd	18.4 dBd
F/B	23 dB	25 dB	30 dB	26 dB	28 dB
BEAMWIDTH	E=35° / H=38°	E=27° / H=30°	E=18° / H=19°	E=24°	E=17° / H=18°
VSWR	1.2:1 Max.	1.2:1 Max.	1.2:1 @ 902	1:1	1.2:1 Typ.
BOOM LENGTH	3'5"	5'4"	15'4"	5'2"	10' (13 WL)
ELEMENTS	10	18	41	22	35
MOUNTING	REAR	REAR	CENTER	CENTER	CENTER
WIND AREA	.30 SQ FT	.36 SQ FT	1 SQ FT	.3 SQ FT	.6 SQ FT
WIND SURVIVAL	100 MPH	100 MPH	100 MPH	100 MPH	100 MPH
WEIGHT	2.5 LBS	3.5 LBS	6 LBS	2 LBS	4 LBS

Rotators & Accessories

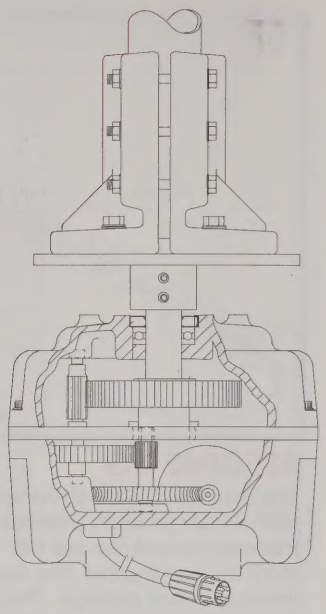
OR-2800 AZ Positioner

Powerful and reliable, the OR-2800 rotates multiple HF antennas or large VHF / UHF arrays with ease. Features include:

1. Precision worm-gear drive, not reversible by mast torque.
2. Non-slip, ductile iron mast clamps
3. Large drive plate for masts up to 3"
4. Heat-treated steel gear train, hardened driveshaft
5. Prop-pitch style torque plate
6. Fits inside towers like the Rohn 25 (top only) and 45, Triex LM-354, and U.S. Towers TX438
7. Motor-mounted digital pulse switch for accurate, closed loop control and heading display

OR-2800 SPECIFICATIONS

Wind Area Capacity	35 sq. ft.
Starting Torque	3500 in./lbs.
Rotating Torque	2800 in./lbs.
Braking Torque	17000 in./lbs.
VerticalLoadCapacity	1800 lbs.
Mast Size (O.D.)	1.75-3"
Rotation Speed, max	110 sec.
Rotation Range	0-360° ±14°
Display / Travel Res	0.1° / .5°
input Voltage	110 / 220 AC
Motor voltage	28 - 42 VAC
Cable requirements	3-#18, 2-#22
Weight (rotator unit)	42 lbs.



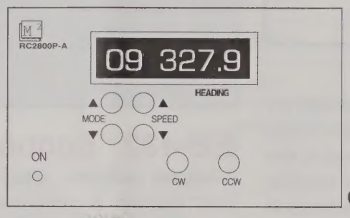
Control Units

RC2800 Manual Control Unit

Digital display, push-button controls with variable speed control, reverse delay, N or S stop, programmable travel limits.

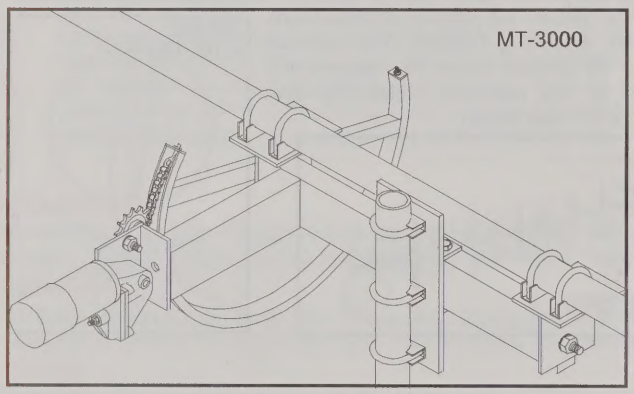
RC2800P-A Programmable Control Unit

Manual features ***plus*** heading preset, 10 programmable presets, programmable ramped start / stop, 1/2 degree target accuracy. RS232 port for complete computer control, tracking programs, etc.



MADE IN U.S.A.

RC2800P-A
CONTROL UNIT



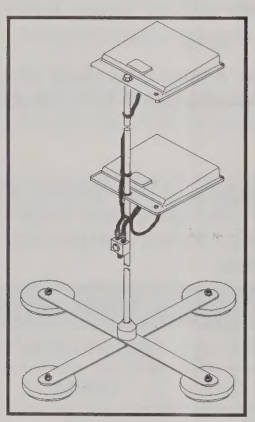
MT-3000 Elevation Positioner

Elevating and maintaining 6 meter, VHF, and UHF arrays is simpler and easier with the powerful and reliable MT-3000. Rotational capability is nearly 180 degrees, making it possible to completely invert an array for assembly, disassembly, and maintenance of upper bays. The MIG welded, gold-zinc plated, structural steel frame accepts crossbooms 3" to 5" (and tower sections, with optional adapter plates).The 24" drive-ring is chain driven by a 28 Volt, outdoor duty, permanent magnet 1255:1gearmotor. Final reduction is 18,947:1 providing 4500 inch/lbs of torque. The control unit counts pulses from a magnetically actuated reed switch, mounted on the motor shaft and delivers a target accuracy 2/10 of a degree. An optional Limit Switch Kit, LSK-1, offers adjustable, weather sealed, travel limit control.

Manual and programmable (with computer control) **Control Units**, similar to the RC2800 and RC2800P-A, are available for the MT-3000.

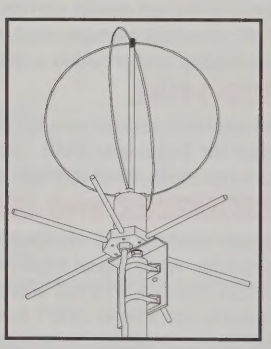
The "BIG FOOT" 4X-Magmount

Powerful Four Point magnet mount for UHF, VHF, and HF mobile antennas. Ideal for newer vehicles that often lack a convenient attachment point, or less roof material for use with magnetic bases. Black mylar magnet covers protect painted surfaces, and the "BIG FOOT" design, allows for more flexibility. The "BIG FOOT" will handle the 2 meter SQLOOP-STACK (shown), stacked 2 and 6 meter SQLOOPS, 8' vertical whips and a variety of HF Mobile antennas.



RK-2M and RK-70 Reflector Kits

Reflector and base mount package for the EB-144 and EB-432 "Eggbeaters" (shown). The six 1/4" rod reflectors produce a hemispherical pattern, increasing the overhead circular signal by 6 dB for improved satellite communication. A mounting plate, with 1-1/2" and 2" U-bolts, is supplied for easy installation to mast tops / sides or sidewalls.



VHF-50 and UHF-50 Phasing Cables

Electronically phased and matched, low-loss, high quality coax cables for your VHF and UHF arrays. Silver-plated connectors are shrink-sleeved and crimp-sealed to coax.

ROHN Towers / Systems & Packages

As a volume distributor for Rohn towers,we can now offer very competitive prices for complete systems and packages, including towers, antennas, Azimuth and Elevation positioners and controllers, crossbooms, "H" frames, power dividers, phasing and matching harnesses, and feedlines, etc. For assistance with developing a successful and powerful system or package, call, write, or fax, with your hardware and performance requirements.

Fiberglass Crossboom:

Strong, non-conductive crossboom unit consisting of two 2" O.D. x 1/4" wall x 60" Fiberglass tubes, a 1-1/2" O.D. x 18" solid aluminum center rod (for mounting through elevation rotor) and stainless steel 1/4-20 assembly hardware. Total length: 11 ft. Ideal for uplink / downlink circular polarized antennas or other applications where a non-interactive crossboom is required.

Power Dividers:

Lossless, airline, 2 and 4 port Power Dividers for 2 meters, 70 cm, and 23 cm are made of seamless aluminum tubing brazed to CNC machined junction blocks. "N" connectors are threaded in and O-ring sealed. Teflon discs support the copper center conductors. All models easily handle 1.5 Kw.

Shipping & Ordering Information

HF LOG PERIODICS		
MODEL	WT	SHIP
6-10LP5	105 lbs	TRK
7-10-30LP8	100 lbs	TRK
10-30LP8	95 lbs	TRK
17-30LP7	35 lbs	UPS
HF MONOBANDERS		
80M1	80 lbs	TRK
80M2	190 lbs	TRK
80M3	400 lbs	TRK
40M1L	25 lbs	UPS
40M2L	62 lbs	TRK
40M3L	99 lbs	TRK
40M4L	128 lbs	TRK
20M4	124 lbs	TRK
20M6	160 lbs	TRK
17M3	34 lbs	UPS
17M5	62 lbs	TRK
15M4	38 lbs	TRK
15M6	59 lbs	TRK
12M4	50 lbs	TRK
10M4	29 lbs	UPS
10M7	55 lbs	TRK

6 METER ANTENNAS		
MODEL	WT	SHIP
6M SQLOOP	7 lbs	UPS
6M5	13 lbs	UPS
6M7	23 lbs	UPS
6M7JHV	20 lbs	UPS
6M2WLC	42 lbs	TRK
6M2.5WLC	47 lbs	TRK
6M3.5JKV	80 lbs	TRK
2 METER ANTENNAS		
2M SQLOOP	2 lbs	UPS
SQLP COMBO	4 lbs	UPS
SQLOOP-STACK	5 lbs	UPS
EB-144	3 lbs	UPS
2M4	4 lbs	UPS
2M7	6 lbs	UPS
2M9FM /2M9SSB	7 lbs	UPS
2M12	10 lbs	UPS
2M5WL	14 lbs	UPS
2M18XXX	16 lbs	UPS
2M8WL	27 lbs	UPS
2MCP14	8 lbs	UPS
2MCP22	14 lbs	UPS
2MXP28	20	UPS
2M5-440XP	6 lbs	UPS

220 ANTENNAS		
MODEL	WT	SHIP
222-7EZ	4 lbs	UPS
222-10EZ	6 lbs	UPS
222-5WL	10 lbs	UPS
222-7WL	14 lbs	UPS
70 CM ANTENNAS		
EB-432	3 lbs	UPS
420-50-5 HD	5 lbs	UPS
420-50-11	5 lbs	UPS
440-18	6 lbs	UPS
440-21ATV	6 lbs	UPS
436CP30	7 lbs	UPS
436CP42U/G	9 lbs	UPS
432-9WL	11 lbs	UPS
432-13WLA	13 lbs	UPS
MICROWAVE ANTENNAS		
902-10EZ	3 lbs	UPS
902-18EZ	5 lbs	UPS
902-14WL	7 lbs	UPS
23CM22EZ	3 lbs	UPS
23CM35	5 lbs	UPS

Look for
New items in
Spring of 1998 !

ACCESSORIES		
MODEL	WT	SHIP
6M 2 PD	7 lbs	UPS
2M 2 & 4 PD	1 lbs	UPS
70CM 2 & 4 PD	1 lbs	UPS
23CM 2 & 4 PD	1 lbs	UPS
220 2 & 4 PD	1 lbs	UPS
902 2 & 4 PD	1 lbs	UPS
VHF 30-300	varies	UPS
UHF 300-800	varies	UPS
UHF 900-1300	varies	UPS
SQ Mag-mount	3 lbs	UPS
Big-Foot 4 Mag	9 lbs	UPS
F'glass X-Boom	15 lbs	UPS
RK-2M	4 lbs	UPS
RK-70CM	3 lbs	UPS
ROTATORS / POSITIONERS		
MT-3000D (EL)	88 lbs	UPS
MT-3000P (EL)	88 lbs	UPS
OR-2800P (AZ)	54 lbs	UPS
RC2800P-Alone	16 lbs	UPS

COMPANY PROFILE

M2 Inc. is a blend of technical expertise, common sense and real world moxy. We have over twenty-five years of experience designing and building antennas to satisfy the ever expanding communications needs. But we don't just build antennas, we understand radio propagation and Mother Nature's effects on it. We also understand how to beat Mother Nature mechanically. We take time to learn our customer's needs and we treat them as our own. We know the pitfalls, and we are dedicated to do everything we can to help you achieve the best, most reliable communications possible. We are a Woman-Owned, small family business with old-fashioned work ethics. Our growing base of repeat customers is a confirmation that we are treating them right.

We have an efficient manufacturing facility with over 10,000 sq. ft. to serve you.

- 3 CNC Mills
- 1 CNC Lathe
- 2 Adjoining Manufacturing Facilities
- Large Test Range
- Quality Control Department
- Procurement Department

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DISCOVER
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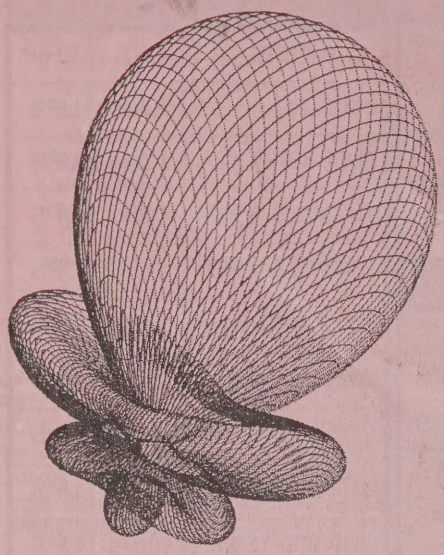
M² products are available through our select Dealer Network or Factory Direct.
For information on ordering or your nearest dealer write, call, or FAX:

7560 N. Del Mar Ave, Fresno, CA 93711 (209) 432-8873 FAX: 432-3059

M² ANTENNAS
Positioners & Accessories



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19 dbd Single
23 dual
26 Quad

13.2" Quad Stacked Dbander